

Serial No. 09/599,250
Response Dated November 26, 2004
Reply To Office Action Of August 25, 2004

REMARKS

In the Office Action dated June 1, 2004, the Examiner noted that claims 1-30 are pending in this application, that all the claims are rejected, that the specification is objected to, and that the drawings filed on June 22, 2000 are accepted.

In this response, Applicants have amended the specification and claims 1, 16, and 21.

In view of the above amendments and the following remarks, Applicants submit that the claims pending in the application are believed to be allowable under 35 U.S.C. §112, 35 U.S.C. §102, and 35 U.S.C. § 103. Thus, Applicants believe that the application is in condition for allowance.

I. OBJECTION TO THE SPECIFICATION

Objection has been raised to the specification on page 1, line 6 for inclusion of the attorney docket number.

The specification has now been amended at page 1 to delete the reference to the attorney docket number. This amendment obviates the ground for objection. Therefore, the specification is believed to be allowable.

II. REJECTION OF CLAIMS UNDER 35 U.S.C. §112

Claim 1 stands rejected under 35 U.S.C. §112 as having insufficient antecedent basis for the term "said transmitted data packets." Claim 1 has been amended.

As presently amended, the term "said transmitted data packets" has been replaced by the term "said selected data packets." The latter term is supported by earlier portions of claim 1. Accordingly, it is believed that claim 1 is proper and allowable under 35 U.S.C. §112.

III. REJECTION OF CLAIMS UNDER 35 U.S.C. §102(e)

The Examiner rejected claims 1-6, 9, 10, 12-17, 19-22, and 26-30 as being anticipated by U.S. Patent 6,067,298 issued to Shinohara. (hereinafter referenced as

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"Shinohara"). Independent claims 1, 16, and 21 have been amended to define Applicants' invention more clearly.

Claims 1, 16, and 21 have been amended to more particularly and more clearly point out features of Applicants' invention. Specifically, these amendments make clear that the storage and grouping of the traffic flows is performed on a per-input basis. That is, at each input, the traffic flows or data packets received at that input are stored and grouped. They are not commingled with traffic flows from other inputs. The grouping, as defined in the claims, is done on at least a Quality of Service basis. Support for these amendments is present in the original application in Figs. 1 and 2 and the specification associated therewith beginning at page 4, line 27 and ending at page 10, line 2. The amendments to these claims are justified and proper and add no new matter.

In amended claim 1, Applicants' call for:

A method for transferring data through a packet switch while providing differentiated Quality-of-Service (QoS) guarantees to respective traffic flows received at individual inputs of the packet switch, the method comprising the steps of:

storing received data packets associated with said traffic flows in a respective input buffer wherein each respective input buffer is associated with a particular individual input of the packet switch;

grouping said traffic flows within a respective input buffer on at least a QoS guarantee basis.

Nowhere does Shinohara teach, show, or suggest that the traffic flows should be grouped on a per-input basis as defined in the amended claim 1. Instead, Shinohara clearly shows and teaches the multiplexing of all the inputs together before separating the packets by service class. Shinohara performs this multiplexing to match the plural low bit rate input traffic with a higher bit rate input in the core switch section. So by grouping all the input packets together and queuing the commingled packets by service class, Shinohara does not even remotely perceive the benefit found by Applicants in keeping packets (traffic flows) from the same input port together in the same buffer.

Since Shinohara does not teach Applicants' claimed storing and grouping steps, Shinohara cannot be said to anticipate or make obvious claim 1. Similarly, Shinohara cannot be said to anticipate or make obvious those claims dependent, either directly or

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indirectly, from claim 1 because those claims include all the unique limitations of the base claim, independent amended claim 1.

Since the Shinohara reference does not teach, show, or suggest each and every step of the unique method claimed by Applicants, it is believed that amended claim 1 and the claims dependent therefrom, namely, claims 2-6, 9, 10 and 12-15 are not anticipated by the Shinohara reference. Therefore, it is believed that claims 1, 2-6, 9, 10 and 12-15 are allowable under 35 U.S.C. §102.

In amended claim 16, Applicants' call for:

A method for transferring data packets through a packet switch while providing differentiated Quality-of-Service (QoS) guarantees to respective traffic flows received at individual inputs of the packet switch, the method comprising the steps of:

storing incoming data packets associated with traffic flows in a plurality of input buffers, each buffer in said plurality of input buffers being associated with a particular individual input of the packet switch;

grouping said traffic flows in each input buffer by QoS classes, each of said QoS classes having a priority level.

Nowhere does Shinohara teach, show, or suggest that the traffic flows should be grouped on a per-input basis as defined in the amended claim 16. Instead, as explained above, Shinohara clearly shows and teaches the multiplexing of all the inputs together before separating the packets by service class. Shinohara performs this multiplexing to match the plural low bit rate input traffic with a higher bit rate input in the core switch section. By grouping all the input packets together and queuing the commingled packets by service class, Shinohara does not even remotely perceive the benefit found by Applicants in keeping packets (traffic flows) from the same input port together in the same buffer.

Since Shinohara does not teach Applicants' claimed storing and grouping steps, Shinohara cannot be said to anticipate or make obvious claim 16. Similarly, Shinohara cannot be said to anticipate or make obvious those claims dependent, either directly or indirectly, from claim 16 because those claims include all the unique limitations of the base claim, independent amended claim 16.

Since the Shinohara reference does not teach, show, or suggest each and every step of the unique method claimed by Applicants, it is believed that amended claim 16

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and the claims dependent therefrom, namely, claims 17, 19 and 20 are not anticipated by the Shinohara reference. Therefore, it is believed that claims 16, 17, 19 and 20 are allowable under 35 U.S.C. §102.

In amended claim 21, Applicants' call for:

An apparatus for transferring data packets through a packet switch while providing differentiated Quality-of-Service (QoS) guarantees, comprising:

a first plurality of schedulers for selecting traffic flows arranged in groups based on a particular packet switch input at which the traffic flows are received and at least a QoS guarantee basis.

As explained above, nowhere does Shinohara teach, show, or suggest that the traffic flows should be grouped on a per-input basis as defined in the amended claim 21. Instead, Shinohara clearly shows and teaches the multiplexing of all the inputs together before separating the packets by service class. Shinohara performs this multiplexing to match the plural low bit rate input traffic with a higher bit rate input in the core switch section. By grouping all the input packets together and queuing the commingled packets by service class, Shinohara does not even remotely perceive the benefit found by Applicants in keeping packets (traffic flows) from the same input port together in the same buffer.

Since Shinohara does not teach Applicants' claimed limitation of arranging the groups of traffic flows, Shinohara cannot be said to anticipate or make obvious claim 21. Similarly, Shinohara cannot be said to anticipate or make obvious those claims dependent, either directly or indirectly, from claim 21 because those claims include all the unique limitations of the base claim, Independent amended claim 21.

Since the Shinohara reference does not teach, show, or suggest each and every step of the unique method claimed by Applicants, it is believed that amended claim 21 and the claims dependent therefrom, namely, claims 22, and 26-30 are not anticipated by the Shinohara reference. Therefore, it is believed that claims 21, 22 and 26-30 are allowable under 35 U.S.C. §102.

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IV. REJECTION OF CLAIMS UNDER 35 U.S.C. §103(a)

A. Rejection over Shinohara in view of Regache

Claims 7, 18 and 23 stand rejected as being unpatentable over Shinohara in view of U.S. Patent 5,579,312 issued to Regache (hereinafter "Regache"). This rejection is respectfully traversed.

Claim 7 depends from claim 3 and independent claim 1; claim 18 depends from independent claim 16; and claim 23 depends from independent claim 21. Differences between the independent base claims and the Shinohara reference have been explained above in Section III of this response. Since dependent claims 7, 18, and 23 include all the limitations of their respective independent base claim, each of which is believed to be allowable, the dependent claims are also believed to be allowable for the same reasons.

Regache describes a method and apparatus for scheduling transmission of cells of guaranteed bandwidth virtual channels. While Regache does teach guaranteed bandwidth operation, Regache fails to bridge the considerable differences between Shinohara and Applicants' claimed invention. Even if Regache were to be combined with Shinohara in the manner detailed in the present Office Action, the resulting combination would fail to present any appreciation for storing and grouping the traffic flows at each input separate from the other inputs. The resulting combination would follow the teachings of Shinohara in which all the input traffic flows are multiplexed together and then grouped by service class. This results in traffic flows for the same service class that are commingled with traffic flows from each and every input. Such a result is completely different from Applicants' claimed method (claims 7 & 18) and apparatus (claim 23).

In light of the reasons presented directly above and in Section III of these remarks particularly with respect to independent claims 1, 16 and 21, it is submitted that Applicants' claimed invention would not have been obvious to a person of ordinary skill in the art upon a reading of Shinohara and Regache, alone or in combination, at the time Applicants' invention was made. As a result, claims 7, 18, and 23 are believed to be allowable under 35 U.S.C. §103.

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B. Rejection over Shinohara in view of Regache

Claims 8 and 24 stand rejected as being unpatentable over Shinohara in view of Regache. This rejection is respectfully traversed.

Claim 8 depends from claim 2 and independent claim 1, and claim 24 depends from independent claim 21. Differences between the independent base claims and the Shinohara reference have been explained above in Section III of this response. Since dependent claims 8 and 24 include all the limitations of their respective independent base claim, each of which is believed to be allowable, the dependent claims are also believed to be allowable for the same reasons.

While Regache does teach guaranteed bandwidth operation, Regache fails to bridge the considerable differences between Shinohara and Applicants' claimed invention. Even if Regache were to be combined with Shinohara in the manner detailed in the present Office Action, the resulting combination would fail to present any appreciation for storing and grouping the traffic flows at each input separate from the other inputs. The resulting combination would follow the teachings of Shinohara in which all the input traffic flows are multiplexed together and then grouped by service class. This results in traffic flows for the same service class that are commingled with traffic flows from each and every input. Such a result is completely different from Applicants' claimed method (claim 8) and apparatus (claim 24).

In light of the reasons presented directly above and in Section III of these remarks particularly with respect to independent claims 1 and 21, it is submitted that Applicants' claimed invention would not have been obvious to a person of ordinary skill in the art upon a reading of Shinohara and Regache, alone or in combination, at the time Applicants' invention was made. As a result, claims 8 and 24 are believed to be allowable under 35 U.S.C. §103.

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C. Rejection over Shinohara in view of Hiroki

Claims 7, 18 and 23 stand rejected as being unpatentable over Shinohara in view of JPO 06-2884453 of Hiroki (hereinafter "Hiroki"). This rejection is respectfully traversed.

Claim 11 depends from claim 10 and independent claim 1, and claim 25 depends from independent claim 21. Differences between the independent base claims and the Shinohara reference have been explained above in Section III of this response. Since dependent claims 11 and 25 include all the limitations of their respective independent base claim, each of which is believed to be allowable, the dependent claims are also believed to be allowable for the same reasons.

Hiroki describes a technique for handling an overflow condition caused by excess cells being transmitted from the input buffers of an ATM switch to the output buffers. Additional buffer storage is provided between the input buffers and the output buffers to handle the surplus (overflow condition) until there is capacity freed up in the output buffers for more storage. There is no teaching that the input buffer capacity exceeds the output buffer capacity. Hiroki only teaches that there is an intermediate buffer for handling any surplus or overflow.

Even so, Hiroki fails to bridge the considerable differences between Shinohara and Applicants' claimed invention. If Hiroki were to be combined with Shinohara in the manner detailed in the present Office Action, the resulting combination would fail to present any appreciation for storing and grouping the traffic flows at each input separate from the other inputs. The resulting combination would follow the teachings of Shinohara in which all the input traffic flows are multiplexed together and then grouped by service class. This results in traffic flows for the same service class that are commingled with traffic flows from each and every input, not segregated on a per-input basis as claimed by Applicants. Such a result is completely different from Applicants' claimed method (claims 11) and apparatus (claim 25).

In light of the reasons presented directly above and in Section III of these remarks particularly with respect to independent claims 1 and 21, it is submitted that Applicants' claimed invention would not have been obvious to a person of ordinary skill

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in the art upon a reading of Shinohara and Hiroki, alone or in combination, at the time Applicants' invention was made. As a result, claims 11 and 25 are believed to be allowable under 35 U.S.C. §103.

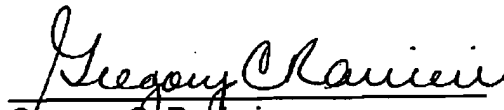
CONCLUSION

In view of the foregoing amendments and remarks, Applicants respectfully submit that this application is in condition for allowance. Reconsideration and allowance are respectfully solicited.

If, however, the Examiner believes that there are any unresolved issues requiring adverse final action in any of the claims now pending in the application, it is requested that the Examiner telephone Gregory C. Ranieri, Esq. at (732) 383-1394 so that appropriate arrangements can be made for resolving such issues as expeditiously as possible.

Respectfully submitted,

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